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10/587,222	07/24/2006	Mitsuyuki Fujisawa	JFE-06-1205	8264

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EXAMINER	
VELASQUEZ, VANESSA T	
ART UNIT	PAPER NUMBER
1793	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,222	FUJISAWA ET AL.	
	Examiner	Art Unit	
	Vanessa Velasquez	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *July 24, 2006; Sept. 17, 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1-20 are pending and presented for examination.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copies of applications JP 2004-021283, JP 2004-074033, and JP 2004-073862 have been filed and placed of record in the file.

Information Disclosure Statement

2. Two (2) information disclosure statements (IDS) were submitted on July 24, 2006 and September 17, 2007. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

References JP 1-225754 (IDS submitted July 24, 2006) and EP 0 337 846 (IDS submitted September 17, 2007) were not considered because they fail to comply with 37 CFR § 1.98. Applicant is reminded that a concise explanation of the relevance of each patent, publication, or other information listed that is not in the English language must be provided or incorporated into the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The term "excellent" in claims 12-15 is a relative term which renders the claim indefinite. The term "excellent" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 16-20 are likewise rejected for their dependencies on Claims 12-15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-3 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser et al. (US 6,096,441).

Regarding Claim 1, US '441 teaches a stainless steel material comprising the following elements, in percent by weight (US '441, col. 2, ln. 1-17):

Carbon	< 0.04
Nitrogen	0.1-0.3

The steel is also composed of austenite (30% to 70%) and ferrite (US '441, col. 2, ln. 18-21). The overlap of the ranges taught by US '441 and the claimed ranges is sufficient to establish a prima facie case of obviousness (MPEP § 2144.05).

Regarding Claim 2, the composition taught by US '441 overlaps the claimed composition; therefore, both compositions would be expected to possess the same properties. (MPEP § 2112.01)

Regarding Claim 3, US '441 teaches a stainless steel material comprising the following elements, in percent by weight (US '441, col. 2, ln. 1-17):

Carbon	< 0.04
Silicon	0.4-1.2
Manganese	2-4
Phosphorous	< 0.1
Sulfur	< 0.03
Chromium	18-22
Nickel	0.1-1
Nitrogen	0.1-0.3
Fe, impurities	balance

The overlap of the ranges taught by US '441 and the claimed ranges is sufficient to establish a prima facie case of obviousness (MPEP § 2144.05).

Regarding Claim 8, copper is suppressed to less than 3 wt.% (US '441, col. 2, ln. 46).

Regarding Claim 9, US '441 fails to teach that any vanadium is present in the stainless steel alloy. Thus, vanadium is interpreted as being absent from the disclosed composition. The claimed range encompasses zero percent and is rendered *prima facie* obvious in view of the vanadium teaching of US '441.

Regarding Claim 10, aluminum is confined to an amount between 0.010 wt.% and 0.030 wt.% (US '441, col. 2, ln. 36-37).

Regarding Claim 11, the amount of boron ranges from 0.0005-0.0030 wt.% (US '441, col. 2, ln. 40-41). The amount of calcium ranges from 0.0005-0.0020 wt.% (US '441, col. 2, ln. 38-39).

10. Claims 4, 6, 12, 14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser et al. (US 6,096,441) in view of Espy (US 3,736,131).

Regarding Claim 4, US '441 fails to teach a nickel content as high as the claimed range. However, US '131, also drawn to a ferritic-austenitic stainless steel, teaches a composition similar to the claimed composition, and further teaches that adding up to 3 wt.% nickel is beneficial since nickel, along with nitrogen, promotes the formation of austenite (US '131, col. 2, ln. 56-62). Thus, it would have been obvious to one of ordinary skill in the art to increase the nickel content of US '441 to an amount in the range taught by US '131 because of the ability of nickel to augment the existing austenitic phase.

Regarding Claim 6, US '441 fails to teach a manganese content as high as the claimed range. However, US '131, also drawn to a ferritic-austenitic stainless steel, teaches a composition similar to the claimed composition, and further teaches that adding manganese in amount greater than 4 wt.% is beneficial since manganese acts as an austenite stabilizer (US '131, col. 2, ln. 50-55). Thus, it would have been obvious to one of ordinary skill in the art to increase the manganese content of US '441 to an amount in the range taught by US '131 because of the ability of nickel to augment the existing austenitic phase.

Regarding Claims 12 and 20, US '441 teaches a stainless steel material comprising the following elements, in percent by weight (US '441, col. 2, ln. 1-17):

Carbon	< 0.04
Silicon	0.4-1.2
Manganese	2-4
Phosphorous	< 0.1
Sulfur	< 0.03
Chromium	18-22
Nitrogen	0.1-0.3
Fe, impurities	balance

The steel is also composed of austenite (30% to 70%) and ferrite (US '441, col. 2, ln. 18-21).

Still regarding Claim 12 and concerning the nickel content, US '441 fails to teach a nickel content as high as the claimed range. However, US '131, also drawn to a ferritic-austenitic stainless steel, teaches a composition similar to the claimed composition, and further teaches that adding up to 3 wt.% nickel is beneficial since nickel, along with nitrogen, promotes the formation of austenite (US '131, col. 2, ln. 56-62). Thus, it would have been obvious to one of ordinary skill in the art to increase the nickel content of US '441 to an amount in the range taught by US '131 because of the ability of nickel to augment the existing austenitic phase.

Still regarding Claim 12 and concerning drawability, US '441 and US '131 are silent as to the drawability of the alloys. However, because the composition taught by

US '441 in view of US '131 overlaps the claimed composition, they would also be expected to possess the same properties. (MPEP § 2112.01)

Regarding Claims 14 and 20, US '441 teaches a stainless steel material comprising the following elements, in percent by weight (US '441, col. 2, ln. 1-17):

Carbon	< 0.04
Silicon	0.4-1.2
Phosphorous	< 0.1
Sulfur	< 0.03
Chromium	18-22
Nickel	0.1-1
Nitrogen	0.1-0.3
Fe, impurities	balance

The steel is also composed of austenite (30% to 70%) and ferrite (US '441, col. 2, ln. 18-21).

Still regarding Claim 14 and concerning the manganese content, US '441 fails to teach a manganese content as high as the claimed range. However, US '131, also drawn to a ferritic-austenitic stainless steel, teaches a composition similar to the claimed composition, and further teaches that adding manganese in amount greater than 4 wt.% is beneficial since manganese acts as an austenite stabilizer (US '131, col. 2, ln. 50-55). Thus, it would have been obvious to one of ordinary skill in the art to increase the manganese content of US '441 to an amount in the range taught by US '131 because of the ability of nickel to augment the existing austenitic phase.

Still regarding Claim 14 and concerning corrosion resistance at welded parts, the alloy taught by US '441 in view of US '131 have high resistance to corrosion (US '131, Abstract). In addition, the welds of austenoferritic possess good mechanical properties (US '441, col. 1, ln. 29-37).

Regarding Claim 16, copper is suppressed to less than 3 wt.% (US '441, col. 2, ln. 46).

Regarding Claim 17, US '441 fails to teach that any vanadium is present in the stainless steel alloy. Thus, vanadium is interpreted as being absent from the disclosed composition. The claimed range encompasses zero percent and is rendered *prima facie* obvious in view of the vanadium teaching of US '441.

Regarding Claim 18, aluminum is confined to an amount between 0.010 wt.% and 0.030 wt.% (US '441, col. 2, ln. 36-37).

Regarding Claim 19, the amount of boron ranges from 0.0005-0.0030 wt.% (US '441, col. 2, ln. 40-41). The amount of calcium ranges from 0.0005-0.0020 wt.% (US '441, col. 2, ln. 38-39).

11. Claims 5, 7, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser et al. (US 6,096,441) in view of Yazawa et al. (US 5,413,754).

Regarding Claim 5, US '441 fails to teach a manganese content as low as the claimed range. However, US '754, also drawn to a stainless steel, teaches that adding manganese in amount greater than 1 wt.% has deleterious effects on the hot working

capabilities of the steel (US '754, col. 6, ln.14-20). Thus, it would have been obvious to one of ordinary skill in the art to lower the manganese content of US '441 to an amount in the range taught by US '754 to prevent the deterioration of the hot working properties of the steel alloy.

Regarding Claim 7, US '441 fails to teach a silicon content as low as the claimed range. However, US '754, also drawn to a stainless steel, teaches that adding manganese in amount greater than 1 wt.% negatively impacts toughness and elongation (US '754, col. 6, ln. 6-11). Thus, it would have been obvious to one of ordinary skill in the art to lower the silicon content of US '441 to an amount in the range taught by US '754 to prevent the deterioration of elongation and toughness of the steel alloy.

Regarding Claim 13, US '441 teaches a stainless steel material comprising the following elements, in percent by weight (US '441, col. 2, ln. 1-17):

Carbon	< 0.04
Silicon	0.4-1.2
Phosphorous	< 0.1
Sulfur	< 0.03
Chromium	18-22
Nickel	0.1-1
Nitrogen	0.1-0.3
Fe, impurities	balance

The steel is also composed of austenite (30% to 70%) and ferrite (US '441, col. 2, ln. 18-21).

Still regarding Claim 13 and concerning the manganese content, US '441 fails to teach a manganese content as low as the claimed range. However, US '754, also drawn to a stainless steel, teaches that adding manganese in amount greater than 1 wt.% has deleterious effects on the hot working capabilities of the steel (US '754, col. 6, ln.14-20). Thus, it would have been obvious to one of ordinary skill in the art to lower the manganese content of US '441 to an amount in the range taught by US '754 to prevent the deterioration of the hot working properties of the steel alloy.

Regarding Claim 15, US '441 teaches a stainless steel material comprising the following elements, in percent by weight (US '441, col. 2, ln. 1-17):

Carbon	< 0.04
Manganese	2-4
Phosphorous	< 0.1
Sulfur	< 0.03
Chromium	18-22
Nickel	0.1-1
Nitrogen	0.1-0.3
Fe, impurities	balance

The steel is also composed of austenite (30% to 70%) and ferrite (US '441, col. 2, ln. 18-21).

Still regarding Claim 15 and concerning the silicon content, US '441 fails to teach a silicon content as low as the claimed range. However, US '754, also drawn to a stainless steel, teaches that adding manganese in amount greater than 1 wt.% negatively impacts toughness and elongation (US '754, col. 6, ln. 6-11). Thus, it would have been obvious to one of ordinary skill in the art to lower the silicon content of US '441 to an amount in the range taught by US '754 to prevent the deterioration of elongation and toughness of the steel alloy.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is (571)270-3587. The examiner can normally be reached on Monday-Friday 8:30 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793